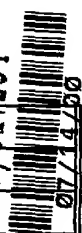


+

07/14/00

PTO 09/01/2000



US 3510

# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 35.G2619

First Named Inventor or Application Identifier

TAKEHIRO YOSHIDA

Express Mail Label No.

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

## ADDRESS TO:

Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

1. ☐ Fee Transmittal Form  
(Submit an original, and a duplicate for fee processing)

2. ☒ Specification Total Pages 15

3. ☒ Drawing(s) (35 USC 113) Total Sheets 7

4. ☒ Oath or Declaration Total Pages 1

a. ☒ Newly executed (original or copy)

b. ☐ Unexecuted for information purposes

c. ☐ Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 17 completed)  
[Note Box 5 below]

i. ☐ DELETION OF INVENTOR(S)

Signed Statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1.33(b).

5. ☐ Incorporation By Reference (useable if Box 4c is checked)  
The entire disclosure of the prior application, from which a copy of the  
oath or declaration is supplied under Box 4c, is considered as being  
part of the disclosure of the accompanying application and is hereby  
incorporated by reference therein.

6. ☐ Microfiche Computer Program (Appendix)

7. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)

a. ☐ Computer Readable Copy

b. ☐ Paper Copy (identical to computer copy)

c. ☐ Statement verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

8. ☒ Assignment Papers (cover sheet & document(s))

9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)

10. ☐ English Translation Document (if applicable)

11. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations

12. ☒ Preliminary Amendment

13. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)

14. ☐ Small Entity Statement(s) ☐ Statement filed in prior application  
Status still proper and desired

15. ☐ Certified Copy of Priority Document(s)  
(if foreign priority is claimed)

16. ☐ Other: \_\_\_\_\_

17. If a CONTINUING APPLICATION, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. \_\_\_\_/\_\_\_\_

## 18. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label

05514  
(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

NAME

Address

City

State

Zip Code

Country

Telephone

Fax

+

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c))	5-20 =	0	X \$ 18.00 =	\$0.00
	INDEPENDENT CLAIMS (37 CFR 1.16(b))	2-3 =	0	X \$ 78.00 =	\$0.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			\$260.00 =	\$0.00
				BASIC FEE (37 CFR 1.16(a))	\$690.00
	Total of above Calculations =				\$690.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				
	TOTAL =				\$690.00

19. Small entity status

- a. ☐ A Small entity statement is enclosed
- b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.
- c. ☐ Is no longer claimed.

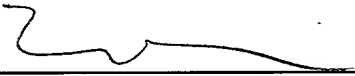
20. ☒ A check in the amount of \$ 690.00 to cover the filing fee is enclosed.

21. ☒ A check in the amount of \$ 40.00 to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

- a. ☒ Fees required under 37 CFR 1.16.
- b. ☒ Fees required under 37 CFR 1.17.
- c. ☐ Fees required under 37 CFR 1.18.

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

NAME	Leonard P. Diana (Reg. No. 29,296)
SIGNATURE	
DATE	July 13, 2000

35.G2619

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
: Examiner: Not Yet Assigned  
TAKEHIRO YOSHIDA )  
: Group Art Unit: NYA  
Application No.: NYA )  
:  
Filed: Concurrently Herewith )  
:  
For: COMMUNICATION APPARATUS ) July 13, 2000

Commissioner for Patents  
Box Patent Application  
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to calculation of the filing fee, please  
amend the above-identified application as follows:

IN THE CLAIMS

Please amend Claim 3 as follows:

Claim 3, line 1, delete "or 2".

Please add Claim 5 as follows:

--5. A communication apparatus according to Claim  
2, wherein said control means performs control so that, when  
the sub-address signal and transfer to a predetermined

address, serving as the communication specification are registered in said registration means so as to correspond to the memory box, if the registered sub-address signal is received, the transmitter information is added, and received information is transferred to the predetermined address.--


REMARKS

The foregoing amendments are presented to remove the multiple dependency of Claim 3. Claims 1-5 are pending in this application. Claims 1 and 4 are in independent form.

Favorable consideration and early passage to issue are respectfully requested.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

  
\_\_\_\_\_  
Attorney for Applicant

Registration No. 29,296  
29,296

FITZPATRICK, CELLA, HARPER & SCINTO  
30 Rockefeller Plaza  
New York, New York 10112-3801  
Facsimile: (212) 218-2200

NY\_MAIN 95870 v 1

TITLE OF THE INVENTION

COMMUNICATION APPARATUS

5 BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a communication apparatus capable of performing ring-type multiple-address transmission.

10 Description of the Related Art

A description will now be provided of a conventional facsimile apparatus, serving as a communication apparatus capable of performing ring-type multiple-address transmission. This facsimile apparatus includes selection means for selecting whether or not transmitter information is to be transmitted at a transmission operation. When it has been selected to add the transmitter information, the transmitter information is added at any of ordinary transmission, memory multiple-address transmission, memory transmission, and transfer. On the other hand, when it has been selected not to add the transmitter information, the transmitter information is not added at any of ordinary transmission, memory multiple-address transmission, memory transmission, and transfer.

In the above-described conventional approach, however, if ring-type multiple-address transmission is executed in a state in which transmission of transmitter information is selected, for example, if transmission is executed from FAX (facsimile) A to FAX B, from FAX B to FAX C, from FAX C to FAX D, from FAX D to FAX E, and from FAX E to FAX A, when FAX E receives

ring-type multiple-address reception information, information relating to four transmitters is added. If information from an original is sufficient enough to be recorded, for example, from the uppermost portion to the lowermost portion of a cut recording sheet, the received information is  
5 recorded in a state of being divided into two pages.

### SUMMARY OF THE INVENTION

The present invention has been made in consideration of the  
10 above-described problems in the prior art.

It is an object of the present invention to provide a communication apparatus which can be used with ease.

According to one aspect, the present invention which achieves the above-described object relates to a communication apparatus capable of  
15 performing ring-type multiple-address transmission. The apparatus includes registration means for registering a sub-address signal and a communication specification so as to correspond to a memory box, start selection means for selecting start of ring-type multiple-address transmission, ring-type multiple-address reception transfer selection means for selecting transfer of  
20 ring-type multiple-address reception, and control means for performing control so that, when start of ring-type multiple-address transmission has been selected, transmitter information is added, and when transfer of ring-type multiple-address reception has been selected, the transmitter information is not added.

25 According to another aspect, the present invention which achieves the above-described object relates to a communication apparatus capable of

performing ring-type multiple-address transmission. The apparatus includes a memory for storing received data, a transfer unit for transferring the received data stored in the memory, an identification unit for identifying whether or not the received data is data assigned to be subjected to ring-type multiple-address processing, and a processor for causing transfer means to transfer the received data without adding transmitter information if the received data is data assigned to be subjected to ring-type multiple-address processing, and for causing the transfer means to transfer the received data with adding the transmitter information if the received data is not data assigned to be subjected to ring-type multiple-address processing.

The foregoing and other objects, advantages and features of the present invention will become more apparent from the following description of the preferred embodiment taken in conjunction with the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating the configuration of a facsimile apparatus according to an embodiment of the present invention;

FIG. 2 is a diagram illustrating a specific example of data registered in a memory circuit in the facsimile apparatus shown in FIG. 1;

FIGS. 3A — 3C are diagrams, each illustrating an example of addition of transmitter information in the facsimile apparatus shown in FIG. 1; and

FIGS. 4 through 9 are flowcharts, each illustrating the flow of an operation in the facsimile apparatus shown in FIG. 1.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the present invention will now be described illustrating a facsimile apparatus, with reference to the drawings.

5           FIG. 1 is a block diagram illustrating the configuration of a facsimile apparatus according to the preferred embodiment. In FIG. 1, An NCU (network control unit) 2 performs, for example, operations of connecting a telephone network to a terminal of a line, controlling connection of a telephone switched network, switching to a data communication channel, and  
10       maintaining a loop, in order to use the telephone network for data communication and the like. The NCU 2 also connects a telephone line 2a to a telephone set 4 (to be described later) in response to a control signal from a bus 26 (to be described later) (CML off), or connects the telephone line 2a to the facsimile apparatus side (CML on). In an ordinary state, the telephone  
15       line 2a is connected to the telephone set 4.

          A hybrid circuit 6 separates a signal of a transmission system from a signal of a reception system, transmits a transmission signal from an addition circuit 12 (to be described later) to the telephone line 2a via the NCU 2, receives a signal from the communication partner from a signal line 2c via  
20       the NCU 2, and transmits the received signal to a MODEM (modulator-demodulator) 8 (to be described later) via a signal line 6a.

          The MODEM 8 performs modulation/demodulation based on ITU-T (International Telecommunication Union — Telecommunication Standardization Sector) recommendation V.8, V.21, V.27, V.29, V.17 and V.34.  
25       Each transmission mode is assigned by a control signal from the bus 26. The MODEM 8 inputs a transmission signal from the bus 26, outputs modulated



data to a signal line 8a, inputs a received signal output to the signal line 6a, and outputs demodulated data to the bus 26.

5 A calling circuit 10 inputs telephone-number information in response to a control signal from the bus 26, and outputs a DTMF (dual tone multi-frequency) selection signal to a signal line 10a. An addition circuit 12 inputs an information signal from the signal line 8a and an information signal from the signal line 10a, and outputs a signal indicating a result of addition of these information signals to a signal line 12a.

10 A reading circuit 14 outputs read data to the bus 26. A recording circuit 16 records an information signal output to the bus 26 sequentially in units of a line. A memory circuit 18 is used as a wording memory (a RAM (random access memory)), or as a memory for storing original information or encoded information relating to read data, received information, decoded information and the like via the bus 26. The memory circuit 18 also includes  
15 a memory for registering a sub-address signal and a communication specification so as to correspond to a memory box, as shown, for example, in FIG. 2, via the bus 26.

20 An operation unit 20 includes one-touch dials, abbreviation dials, a ten-digit keypad, \* and # keys, a set key, a start key, a stop key, a key for selecting start of ring-type multiple-address transmission, a key for selecting transfer of information by ring-type multiple-address reception, a registration key for assigning registration to a memory box, and other function keys. Key information from each depressed key is output to the bus 26. The operation unit 20 also includes a display unit (not shown), which  
25 inputs an information signal output to the bus 26 and displays the input information.

A CPU (central processing unit) 22 controls the entire facsimile apparatus and executes a facsimile transmission control procedure. A control program for this procedure is stored in a ROM 24 (read-only memory, to be described later). The bus 26 interconnects the respective components.

5       The CPU 22 includes registration means for registering a sub-address signal and a communication specification so as to correspond to a memory box, ring-type multiple-address transmission start selection means, ring-type multiple-address reception transfer selection means, and control means for performing control so that, when start of ring-type multiple-address  
10       transmission has been selected, transmitter information is added, and when transfer of ring-type multiple-address reception has been selected, transmitter information is not added.

      When start of ring-type multiple-address transmission has been selected, transmitter information is added. In the case of ring-type  
15       multiple-address reception/transfer, transmitter information is not added. When start of ring-type multiple-address transmission has been selected, information indicating ring-type multiple-address transmission and information indicating the nickname of the transmitted information are added as transmitter information. When a sub-address signal and transfer of  
20       a predetermined address as a communication specification are registered so as to correspond to a memory box, if the registered sub-address signal is received, receiver information is added, and received information is transferred to the predetermined address.

      A control program for the above-described control is stored in the  
25       ROM 24.

      The above-described information indicating a nickname is, for

example, "PTA circular".

FIGS. 3A - 3C illustrate specific examples of transmitter information.

FIG. 3A illustrates a case of selecting start of ring-type multiple-address transmission at the transmitter's apparatus. For example, transmitter information "ring-type multiple-address transmission (PTA circular) 03-3111-2222 P1" is transmitted, followed by information relating to an original. The transmitter information is transmitted for each page.

FIG. 3B illustrates a case of transferring ring-type multiple-address reception information. In this case, ring-type multiple-address reception information received in the memory is transmitted in its original form without adding transmitter information.

FIG. 3C illustrates a case of performing transfer to a predetermined address corresponding to a memory box. For example, transmitter information "03-3111-2222 P1" is transmitted, followed by transmission of transferred information received and stored in the memory. The transmitter information is transmitted for each page.

Next, a description will be provided of operations of the facsimile apparatus according to the embodiment, with reference to the flowcharts shown in FIGS. 4 through 9.

In FIG. 4, in step S402, the memory circuit 18 is initialized via the bus 18. Then, in step S404, the display unit of the operation unit 20 is cleared via the bus 26. Then, in step S406, CML of the NCU 2 is made in an off-state. Then, in step S408, information from the operation unit 20 is input via the bus 26, and it is determined if registration in a memory box has been selected.

If the result of the determination in step S408 is affirmative, the

process proceeds to step S410, where a sub-address signal and a communication specification corresponding to the memory box of the memory circuit 18 are registered, as shown in FIG. 2, via the bus 26, and the process proceeds to step S412. If the result of the determination in step S408 is negative, the process proceeds to step S412 by skipping step S410.

In step S412, information from the operation unit 20 is input via the bus 26, and it is determined if start of ring-type multiple-address transmission has been selected.

If the result of the determination in step S412 is negative, the process proceeds to step S414, where information from the operation unit 20 is input via the bus 26, and it is determined if transfer of ring-type multiple-address reception has been selected.

If the result of the determination in step S414 is affirmative, the process proceeds to step S426 shown in FIG. 6. If the result of the determination in step S414 is negative, the process proceeds to step S440 shown in FIG. 8.

If the result of the determination in step S412 is affirmative, the process proceeds to step S416, where CML of the NCU 2 is made in an on-state via the bus 26. Then, the process proceeds to step S418, where address A is called using the calling circuit 10 via the bus 26, and the process then proceeds to step S420 shown in FIG. 5.

In FIG. 5, in step S420, a pre-procedure is executed. In this embodiment, "1234" is transmitted as a sub-address signal. Then, in step S422, an image signal is transmitted. In this case, transmitter information is transmitted according to the method shown in FIG. 3A. Then, in step S424, a post-procedure is executed, and the process then returns to the

above-described step S406 shown in FIG. 4.

In FIG. 6, in step S426, it is determined if information by ring-type multiple-address reception "PTA circular" is present in the memory circuit 18.

5           If the result of the determination in step S426 is negative, the process proceeds to step S428, where a message "Information by ring-type multiple-address reception is absent" is displayed on the display unit of the operation unit 20 via the bus 26, and the process then returns to the above-described step S406 shown in FIG. 4.

10           The contents of the display in step S428 are erased according to an appropriate key operation.

          If the result of the determination in step S426 is affirmative, the process proceeds to step S430, where CML of the NCU 2 is made in an on-state via the bus 26. Then, in step S432, address A is called using the calling circuit 10 via the bus 26. Then, in step S434, a pre-procedure is  
15           executed. In this case, "1234" is transmitted as a sub-address signal. After executing the processing of step S434, the process proceeds to step S436 shown in FIG. 7.

          In FIG. 7, in step S436, the information received and stored in the  
20           memory as "PTA circular" is transmitted. In this case, transmitter information is not transmitted according to the method shown in FIG. 3B. Then, in step S438, a post-procedure is executed, and the process then returns to the above-described step S406 shown in FIG. 4.

          In FIG. 8, in step S440, it is determined if facsimile reception has  
25           been selected.

          If the result of the determination in step S440 is negative, the process

proceeds to step S442, where other processing is executed, and the process then returns to the above-described step S406 shown in FIG. 4.

If the result of the determination in step S440 is affirmative, the process proceeds to step S444, where CML of the NCU 2 is made in an on-state via the bus 26. Then, in step S446, a pre-procedure is executed. In this case, “possession of a function of receiving a sub-address signal” is notified.

Then, in step S448, it is determined if a sub-address signal has been received.

If the result of the determination in step S448 is negative, the process proceeds to step S450, where reception/recording of an image signal is performed. Then, in step S452, a post-procedure is executed, and the process then returns to the above-described step S406 shown in FIG. 4.

If the result of the determination in step S448 is affirmative, the process proceeds to step S454 shown in FIG. 9.

In FIG. 9, in step S454, it is determined if the sub-address signal is “1234”.

If the result of the determination in step S454 is affirmative, the process proceeds to step S456, where memory reception is performed as “PTA circular”. Then, in step S458, a post-procedure is performed, and the process then returns to the above-described step S406 shown in FIG. 4.

If the result of the determination in step S454 is negative, the process proceeds to step S460, where it is determined if the sub-address signal is “5678”.

If the result of the determination in step S460 is negative, the process proceeds to step S462, where communication control corresponding to the

received sub-address signal is executed, and the process then returns to the above-described step S406 shown in FIG. 4.

If the result of the determination in step S460 is affirmative, the process proceeds to step S464, where ring-type multiple-address  
5 transmission is received. Then, in step S466, a post-procedure is executed. Then, in step S468, CML of the NCU 2 is made in an off-state via the bus 26. Then, in step S470, waiting is performed for one minute. Then, in step S472, CML of the NCU 2 is made in an on-state via the bus 26.

Then, in step S474, address B is called using the calling circuit 10 via  
10 the bus 26. Then, in step S476, a pre-procedure is executed. In this step, a sub-address signal is not transmitted. Then, in step S478, information just received and stored in the memory is transmitted. In this step, transmitter information is transmitted according to the method shown in FIG. 3C. Then, in step S480, a post-procedure is executed, and the process then returns to  
15 the above-described step S406 shown in FIG. 4.

As described above in detail, according to the communication apparatus of the present invention, when executing ring-type multiple-address transmission, information relating to a transmitter starting the ring-type multiple-address transmission, information indicating the  
20 ring-type multiple-address transmission, and information indicating the nickname of the transmitted information can be transmitted. When transferring ring-type multiple-address reception, transmitter information is not added. Hence, the user of each facsimile apparatus performing ring-type multiple-address transmission can know that the received information has  
25 been transmitted according to ring-type multiple-address transmission, and the person starting the ring-type multiple-address transmission.

Furthermore, even when recording received information on a cut recording sheet, the received information is not recorded in a state of being divided into two pages, and therefore the apparatus is very easy to use.

According to the communication apparatus of the present invention,  
5 when transfer of received information is assigned by a sub-address signal not indicating ring-type multiple-address transmission, transmitter information is added. In this case, since transfer is not performed a plurality of times, received information is not recorded by being divided into two pages. Hence, the receiver of the transferred information can recognize the transmitter of  
10 the information, and therefore the apparatus is very easy to use.

The individual components shown in outline or designated by blocks in the drawings are all well known in the communication apparatus arts and their specific construction and operation are not critical to the operation or the best mode for carrying out the invention.

15 While the present invention has been described with respect to what is presently considered to be the preferred embodiment, it is to be understood that the invention is not limited to the disclosed embodiment. To the contrary, the present invention is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the  
20 appended claims. The scope of the following claims is to be accorded the broadest interpretation so as to encompass all such modifications and equivalent structures and functions.



WHAT IS CLAIMED IS:

1. A communication apparatus capable of performing ring-type multiple-address transmission, said apparatus comprising:

registration means for registering a sub-address signal and a communication specification so as to correspond to a memory box;

start selection means for selecting start of ring-type multiple-address transmission;

ring-type multiple-address reception transfer selection means for selecting transfer of ring-type multiple-address reception; and

control means for performing control so that, when start of ring-type multiple-address transmission has been selected, transmitter information is added, and when transfer of ring-type multiple-address reception has been selected, the transmitter information is not added.

2. A communication apparatus according to Claim 1, wherein said control means performs control so that, when start of ring-type multiple-address transmission has been selected, information indicating ring-type multiple-address transmission and information indicating a nickname of information to be transmitted are added as transmitter information.

3. A communication apparatus according to Claim 1 or 2, wherein said control means performs control so that, when the sub-address signal and transfer to a predetermined address, serving as the communication specification are registered in said registration means so as to correspond to

the memory box, if the registered sub-address signal is received, the transmitter information is added, and received information is transferred to the predetermined address.

4. A communication apparatus capable of performing ring-type multiple-address transmission, said apparatus comprising:

a memory for storing received data;

a transfer unit for transferring the received data stored in said memory;

an identification unit for identifying whether or not the received data is data assigned to be subjected to ring-type multiple-address processing; and

a processor for causing transfer means to transfer the received data without adding transmitter information if the received data is data assigned to be subjected to ring-type multiple-address processing, and for causing the transfer means to transfer the received data with adding the transmitter information if the received data is not data assigned to be subjected to ring-type multiple-address processing.

ABSTRACT OF THE DISCLOSURE

A facsimile apparatus which is easy to use is provided. Control is performed so that a CPU (central processing unit) registers a sub-address  
5 signal and a communication specification so as to correspond to a memory box, selects start of ring-type multiple-address transmission, and selects transfer of ring-type multiple-address reception. When start of ring-type multiple-address transmission has been selected, transmitter information is added. When transferring ring-type multiple-address reception, transmitter  
10 information is not added.

15

20

25

1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Discussion**  
 6. **Conclusion**  
 7. **References**  
 8. **Appendix**  
 9. **Notes**  
 10. **Tables**  
 11. **Figures**  
 12. **Supplementary Materials**  
 13. **Author Contributions**  
 14. **Funding**  
 15. **Conflict of Interest**  
 16. **Publisher's Note**  
 17. **Copyright**  
 18. **Disclaimer**  
 19. **References**  
 20. **Appendix**  
 21. **Notes**  
 22. **Tables**  
 23. **Figures**  
 24. **Supplementary Materials**  
 25. **Author Contributions**  
 26. **Funding**  
 27. **Conflict of Interest**  
 28. **Publisher's Note**  
 29. **Copyright**  
 30. **Disclaimer**

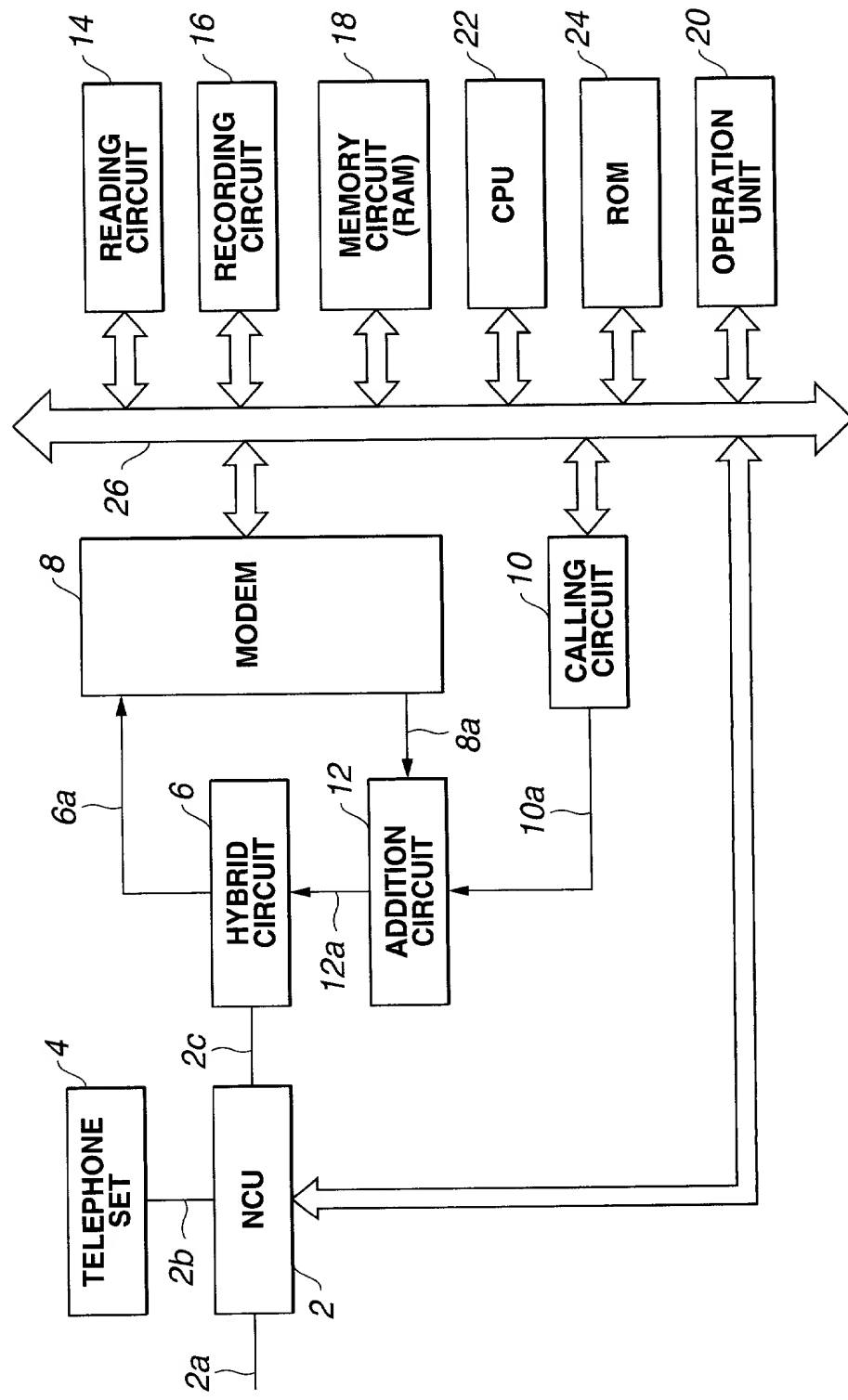


FIG.2

MEMORY-BOX NUMBER	SUB-ADDRESS SIGNAL	COMMUNICATION SPECIFICATION
01	1234	TRANSFER TO ADDRESS A ACCORDING TO RING-TYPE MULTIPLE-ADDRESS TRANSMISSION NICKNAME IS PTA CIRCULAR
02	5678	TRANSFER TO ADDRESS B

FIG.3A

RING-TYPE MULTIPLE-ADDRESS TRANSMISSION (PTA CIRCULAR)	03-3111-2222	P1
---	--------------	----

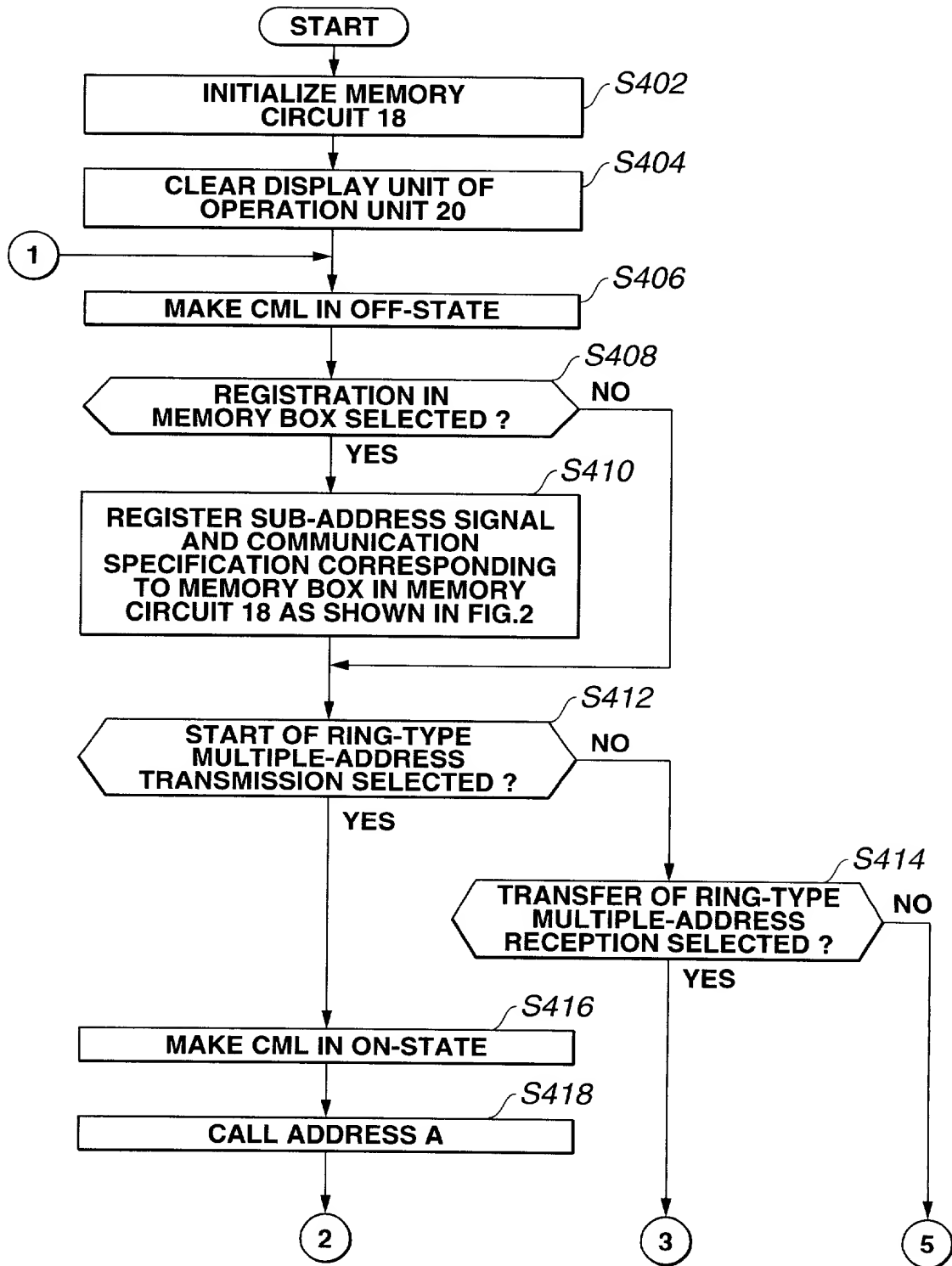
FIG.3B

--

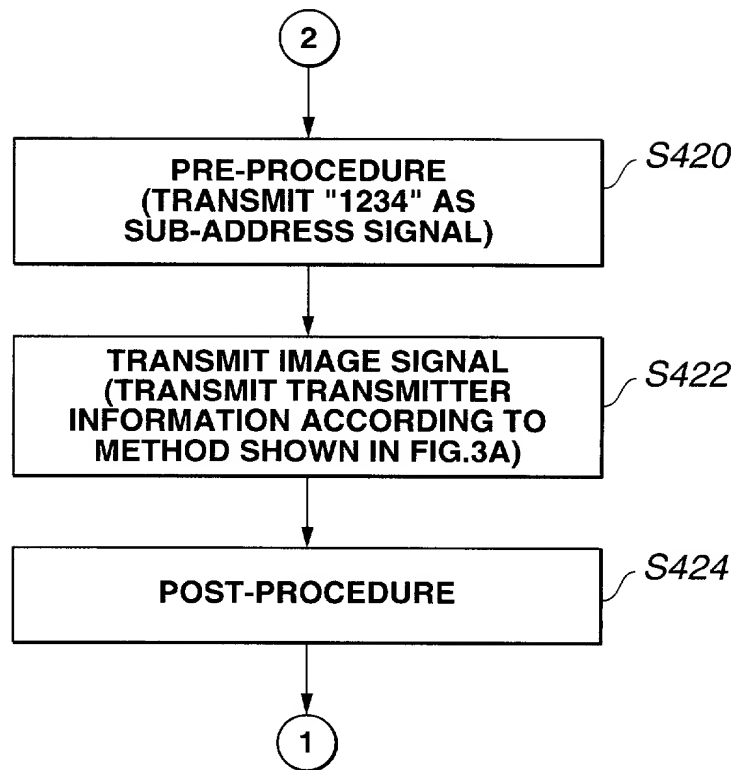
FIG.3C

03-3111-2222	P1
--------------	----

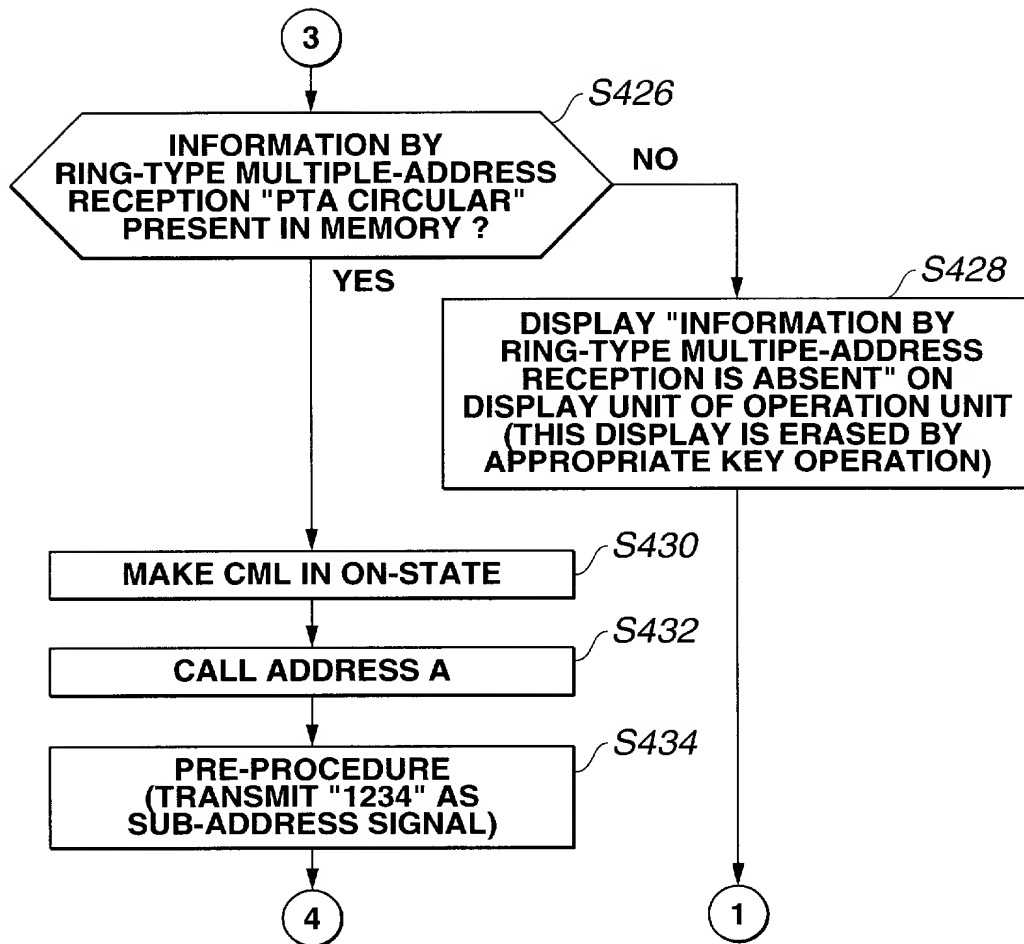
FIG.4



**FIG.5**



# FIG.6



# FIG.7

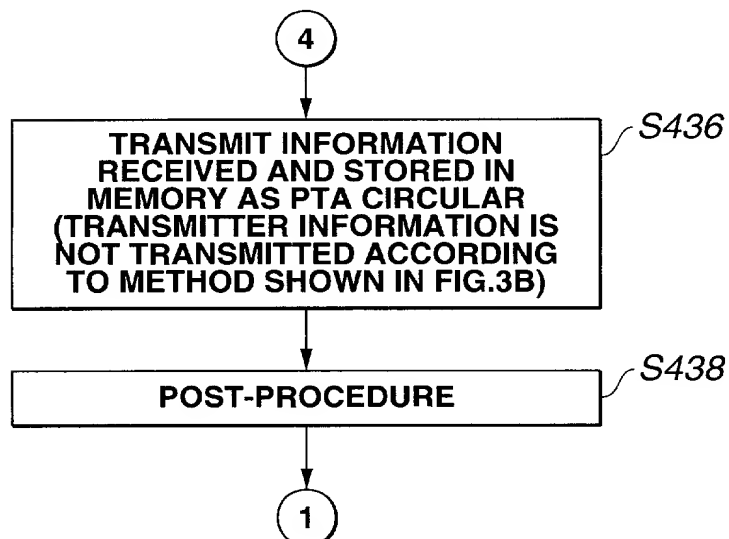




FIG.8

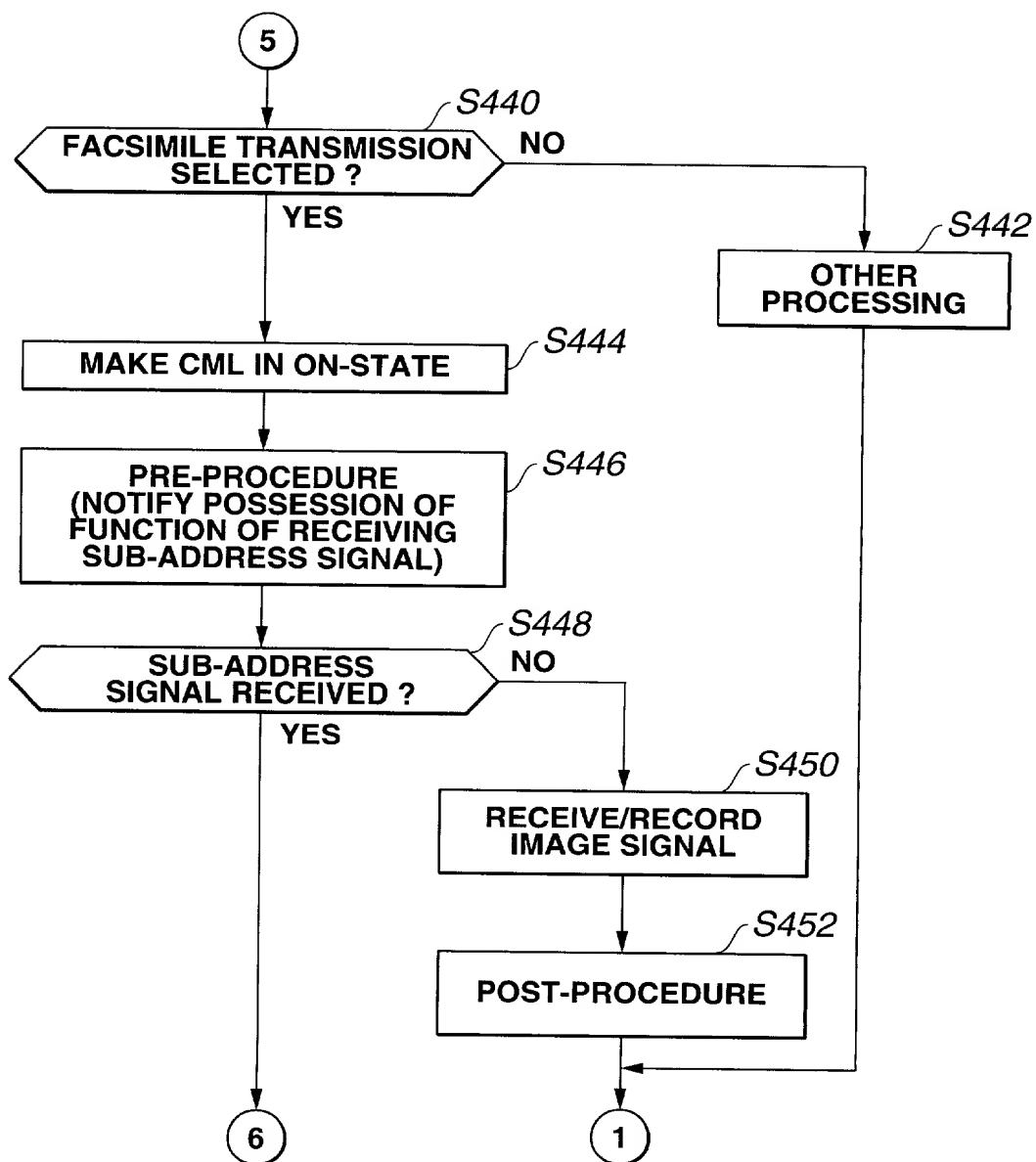
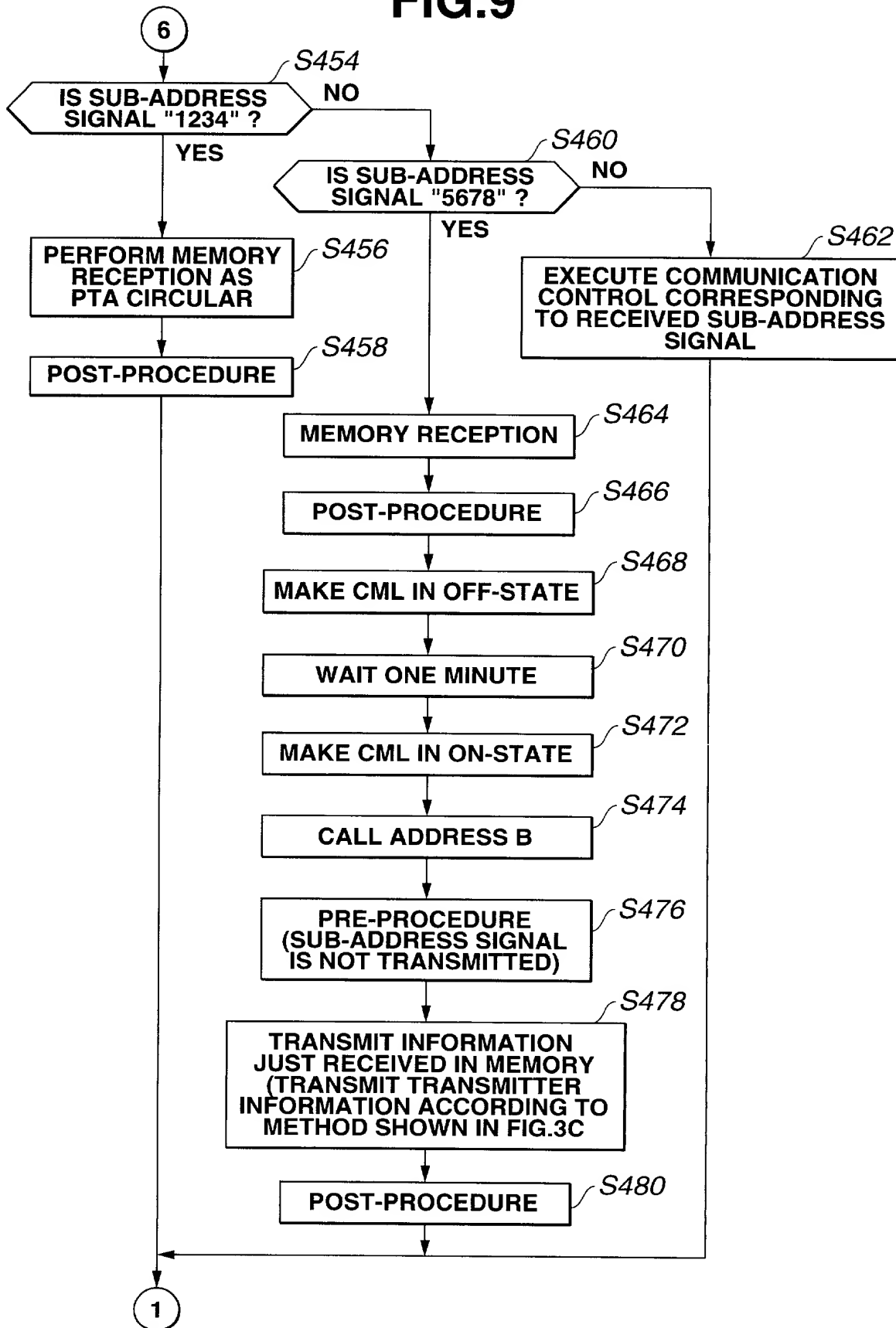


FIG.9



**COMBINED DECLARATION AND POWER OF ATTORNEY  
FOR PATENT APPLICATION**  
(page 1)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled COMMUNICATION APPARATUS  
the specification of which ☒ is attached hereto. ☐ was filed on \_\_\_\_\_ as United States Application No. or PCT International Application No. \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No.	Filed (Day / Mo. / Yr.)	( Yes / No ) Priority Claimed
Japan	206096/1999 (Pat.)	21/July/1999	Yes

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or §365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)

I hereby appoint the practitioners associated with the firm and Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to the address associated with that Customer Number:

**FITZPATRICK, CELLA, HARPER & SCINTO**  
Customer Number: 05514

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole or First Inventor Takehiro Yoshida  
Inventor's signature Takehiro Yoshida  
Date July 7, 2000 Citizen/Subject of Japan  
Residence 1-29-7, Uehara, Shibuya-ku, Tokyo, Japan  
Post Office Address c/o CANON KABUSHIKI KAISHA  
3-30-2, Shimomaruko, Ohta-ku, Tokyo, Japan